



THOMAS G. NEWMAN,  
EDITOR.

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## EDITORIAL BUZZINGS.

**Reports** from western Kansas state that the hot winds of the last few days have so burned up the corn that some fields will not yield a single ear. We do not know how that may be, but the "hot wave" has ruined the honey crop in places too numerous to mention.

We have received a copy of the memorial ceremonies at the funeral of Mr Hiram Chapman, at Versailles, N. Y. It contains ten superbly printed pages, and a cover, and is well worth preserving by his many friends. The address of the Hon. Norman M. Allen, of Dayton, N. Y., at the grave, is an eloquent tribute to the memory of the deceased.

**You can Tell** the day and about the hour when to expect the swarms, and can tell about eight days previous to their swarming by the construction of queen-cells. If cells are just started you can, if nothing happens, look for the swarm in eight days. If the cells are full size, and being sealed over, the swarm is due, and if the weather is fair, they will likely issue. —*Exchange.*

**Ants in the Apiary** are very annoying, and hence we are frequently requested to give some method by which they may be exterminated. The following from the *Scientific American* seems to be highly recommended:

Buy one-half pound or more of corrosive sublimate, powder it very fine, and strew the same sparingly on the ground, also in the crevices, nests, and trails of the ants, and I guarantee the ants will leave your lawn and premises as quick as they have come. Corrosive sublimate is a deadly poison, and should be handled with care.

**More Lies about Comb Honey.**—The following letter and item will show what is still going the rounds of the press:

KINGSTON, Ont., July 29, 1890.  
I send you an item cut from the *Amateur Sportsman*, published at 6 College Place, New York. Is there no way to stop such lies being published? C. H. CORBETT.

Here is the item referred to in the above letter:

Artificial honey, which is more common in the market than customers know, is made of potato starch and oil of vitriol. Some rash optimists think that they are sure of getting the genuine product of bees and flowers by purchasing honey in the comb. They do not know that the exquisite white comb that pleases them is often made of paraffine wax.—*Herald of Health.*

Impatiently, Mr. Corbett asks, "Is there no way to stop such lies from being published?" That is the question! At present we see no way to stop publishers from giving their readers such "potions" of lies if they desire to do so. They are after the sensation that will bring in the dollar, and continually do they publish what they certainly ought to know is nothing but fabrication—all because it pays to do so!

An "Amateur" may be excused, but the "Sportsman" is surely "making sport" of the matter, or should know better than to publish such bare-faced falsehoods. The idea of artificial honey being made of "potato starch and oil of vitriol," and the combs of "paraffine!" A nice mess, truly!

Just think of it—this infamous death-dealing compound is credited to the *Herald of Health!*

All this is but a *distorted* re-statement of the Wiley lie, which the author allowed to be repeated for seven years without one word from him to counteract its baneful influence, when he knew that it was a falsehood from beginning to end, without the slightest foundation to rest upon!

His silence gave color to the story, and allowed others to paint it red, and flaunt it in the face of the world! The greatest lie of the age has been told and retold in every land under the sun; and it has been told so often that thousands now believe it!

In vain is it that the Professor, in sheer desperation, admitted its untruthfulness some two years ago! He allowed it to run until the scandal-mongers got hold of it, and now he is powerless to prevent them from "rolling it under their tongues as a sweet morsel," and ever and anon repeating it to the wonder and amazement of the unsophisticated.

They spice it with "potato starch" and "oil of vitriol," "just for the fun" of seeing those not posted "swallow it at one gulp," and bung their eyes out with wonder and amazement! This age has a wonderful development for scandal!

The people like to be humbugged—and they are accommodated very readily!

How dull it would have been without Prof. Wiley and his magnificent comb honey "lie!"

### The Order of the Honey-Bee.—

This order was established in the year 1708, by Louise of Sceaux, Duchess of Maine. The medal of the Order consisted of gold 14 grains and 63 centigrams, and has the image of the founder of the order, with the inscription L. R. D. S. G. D. P. D. L. O. D. L. M. A. M.; Louise of Sceaux as continuous head of the Order, on one side, and on the other a returning bee to her hive, with the inscription, *Piccola si ma fa gravile ferite*, i. e., "Small, but able to strike deep wounds;" representing the small stature of the Duchess.

The oath which the members of the Order were to take, was as follows: "I swear by the honey of Mount Hymettus, to be true and faithful to the founder of this Order, and to wear the medal during my natural life; and should I ever break my oath, then may the honey be turned into gall, wax into tallow, the honey-flower into thistle, and bees and hornets may destroy my life with their stings."—*Translated from the German by Rev. S. Roese.*

**Mr. G. W. Demaree**, of Christiansburg, Ky., has this to say in a communication dated Aug. 2, 1890, concerning his honey crop, and in reference to an error made by the printer in his reply to Query 721, on page 517:

"I have secured over an average crop of honey from white clover. Owing to irregular weather, the yield of comb honey has not been in the usual proportion to the clear article. I was taken with Sciatic rheumatism right in the best of the honey-flow, and lost heavily for want of skilled help. I am still suffering severely with Sciatic pains.

In my answer to Query No. 721, the third line from the bottom, the word "not" is omitted; the reading should be—"did not lay eggs until the following spring, etc."

**A Tea-Spoonful** of warm honey taken every 15, 20 or 30 minutes, has a surprising effect on catarrh. Every family should have some pure honey in the house in order at once, after catching cold, to be able to use it.

**Frank Coverdale's** article, published on page 520, was written on July 14. He dated it **June**, by mistake. This correction is made because it states that the honey harvest for white clover was over, etc. Such a remark will "fit" better in July than in June.

**The Census Illustrated** sounds rather startling, but that is just what this week's "Frank Leslie's Illustrated Newspaper" does. It is the work of F. W. Hewes, whose studies have received indorsement both at home and abroad. This chart tells graphically at a glance what one could not learn from a mere array of figures in many hours. The themes of the pictures are as varied and as interesting in this issue as usual.

## GLEAMS OF NEWS.

### Detroit Fair and Exposition.

Among Western enterprises of large note and importance this year, in which many readers will find departments of direct interest to their business, is the Detroit International Fair and Exposition, to be held in Detroit, Mich., Aug. 26 to Sept. 5 inclusive. The grounds of this Exposition are the finest, and its buildings the largest and handsomest of any Fair or Exposition in the world. It offers the largest and most costly list of cash premiums ever given on this continent. This great Fair is continental in its scope, and embraces exhibits from all over the United States and Canada. It was the largest and most successful exhibition on this continent last year, and it promises to be still larger and better this year. The attendance last year

feet, and all the buildings are lighted with electricity, so that every animal or stall may be attended at night as freely as by day. The facilities for parading and displaying stock upon the grounds, as well as in the stables, are unsurpassed.

Nor will the useful only be amply provided for, for every variety of spectacle and sport, music and art, will furnish charming pleasures for the multitudes.

The best music in America will be furnished in daily and nightly concerts by Cappa's renowned Seventh Regiment New York Band, with forty eminent soloists.

The magnificent Art Hall will be filled with 300 of the choicest American and European paintings, statuary and other fine art works.

The Apiary Department should have the very finest display ever seen in America. The most noted bee-keepers of Canada and the United States are invited to compete, not only with their choicest colonies, but

exhibition, you can send it by express, charges prepaid, to H. D. Cutting, Superintendent of the Bee and Honey Department, Detroit, Mich. It will be delivered to me in the building, when it will receive good care, and be placed on exhibition. Also send me instructions what to do with articles at the close of the exhibit.

Mr. Hutchinson, of the *Review*, has suggested that all bee-keepers intending to visit the Exposition, meet "just after the judging" on the first week, and visit the Exposition in a body. You will be received by a committee at the bee-keepers' headquarters, and shown over the buildings and grounds, taking in all objects of interest. Please be with us as visitors, if you cannot come as exhibitors. H. D. CUTTING.

We desire to urge the bee-keepers of the surrounding country to make a creditable exhibit at Detroit. We know that it will be the more difficult because of the poor crop of honey, but there should be all the more anxiety to show what can be done even in a poor season.

Bee-Keepers' Day is to be on Friday, Aug. 29, and will be, no doubt, an interesting time for all. Let there be a general rally.

**Skunks in the Apiary.**—On page 380, is a query about skunks molesting bees, and there being but little experience with these unsavory animals, as to their propensity to attack bees, the following additional testimony by Annie C. Webster, in a recent issue of *Farm Life*, may interest the propounder of the question referred to, if not others engaged in the pursuit:

Skunks are quite frequent visitors to bee-hives that are low down, and they quickly depopulate a colony. Like many other wood animals they have an insatiable thirst for honey, and in order to satisfy their cravings they will run the risk of losing their lives. In the woods they will frequently scent out a nest of bees, in the hollow trunks of trees, and make a raid upon it.

It is impossible for them to get into a good stout bee-hive, and they adopt other means of satisfying their hunger. In the night time they will scratch on the outside of the hive until the bees are attracted by the noise, and emerge from the small doorway. The skunks will catch them as they come out, and eat them. They never touch the drones, or the bees that do not have honey in their sacs. Their object is to get the honey, and they eat the bees as the only way of securing the coveted sweets.

These are disagreeable visitors in the spring and summer of the year, and colonies will be completely demoralized, or depopulated in a few nights if the animals are not kept away. If the hives are placed high up from the ground, no danger may be expected from skunks; but if they are situated close down to the earth it will be necessary to set traps for the animals. Nothing is better for this than the common steel trap. These traps should be set, on the first signs of skunks in the neighborhood, for a great deal of worry and damage might be saved thereby.

**Quick Work.**—I received the Globe Bee-Veil to day, and I am well pleased with it. I am also very much pleased with the quick delivery of goods. I received them in two days and a half after the money was sent.—Bert Viager, Moline, Ills.



International Fair and Exposition, Detroit, Mich.

numbered hundreds of thousands of people from all parts of the United States and Canada, and is confidently expected to be greatly increased this year.

Not only are there to be first-class exhibits from individuals and firms from all the States in the Union, and from Canada and Mexico, but the great transcontinental lines of railway from the Atlantic to the Pacific, and from Canada to the Gulf and City of Mexico, will collect and aggregate for exhibition, agricultural, mineral and other rich products along their lines, and the vast buildings and grounds of the Exposition will be crowded with a grand display of the animal, vegetable, mineral and industrial wealth and prosperity of the whole American continent. All the latest inventions and the grand triumphs of inventions and mechanics will also be profusely displayed.

There are stables for all kinds of stock, which cover acres of ground, those for each class of horses, cattle, sheep, swine, poultry, etc., being built in an immense hollow square, leaving a large open arena in the centre for exercise and display. There are water troughs, with facilities for cleaning as well as drinking, every 300

also with the finest honey and wax in all shapes, hives, combs, implements, and everything pertaining to the business, for which the largest cash premiums are offered.

We call special attention to the following letter from Mr. H. D. Cutting, Superintendent of the Bee and Honey Department of the Detroit Fair Exposition:

I would like to call the attention of all bee-keepers to this fact: It being an extra poor season for honey, an extra exertion must be made to secure a good attendance of exhibitors.

The Exposition Company have granted everything we have asked for—given us an extra space to show our products, the largest premium list ever offered in this country for this Department, also an expert judge with a "world-wide reputation." If we do not make a good exhibit, and fill the space allotted to us, next year the list will be reduced. They have been very liberal with us, with the expectation that we are to make a large, fine, and attractive exhibit.

Now, fellow bee-keepers, do not let this be a failure, but show the people that in the face of a crop failure we can, and will, sustain the good reputation already formed, and make this a fine and attractive exhibit. If you do find it impossible to be present, and have anything pertaining to this Department that you wish placed on



## QUERIES REPLIES.

### Expanding or Contracting to Get the Most Honey.

Written for the American Bee Journal

QUERY 722.—What is the best method to get the greatest amount of surplus honey—to expand or contract the brood-chamber?—New York.

If in the comb, contract. If extracted, expand.—M. MAHIN.

Expand before the honey harvest, and contract when it arrives.—G. M. DOOLITTLE.

Contraction is the popular thing, but I have some doubts.—C. C. MILLER.

For comb honey, contraction usually is the better method, and I prefer it in extracted honey also.—J. M. SHUCK.

I cannot say "what is the best method," I just let the brood-chamber alone, if in good condition.—H. D. CUTTING.

To expand to secure the production of the bees to gather the honey, and to contract during the honey-flow.—R. L. TAYLOR.

All depends upon the season, time, condition of the bees, and the bee-keeper. Contraction, wisely practiced is, without doubt, very helpful.—A. J. COOK.

For securing "the greatest amount" of extracted honey, have a large brood-nest so as to have lots of bees to gather the honey when the flow comes.—A. B. MASON.

To contract, of course; but you have to feed the bees, which, having decreased in numbers, are not fit for a good wintering.—DADANT & SON.

Contract, of course. Expanding would spoil "the whole business," as it would give the bees a fine chance to fill the spaces with comb at once.—J. E. POND.

When I work for comb honey, I do not want the brood-chamber too large—8 or 9 frames are sufficient; but when for extracted honey, I want it extended on the Adair plan.—J. P. H. BROWN.

I expand to the capacity of the queen's fertility, in the brood chamber, and give surplus room sufficient to accommodate the surplus bees.—J. M. HAMBAUGH.

Probably by contracting the brood-chamber at the right time, a larger amount of comb honey can be secured; but I doubt, taking one season with another, whether it pays for the trouble.—MRS. L. HARRISON.

This is a question I have tried to solve for some time. It should have been stated if extracted or comb honey is desired, as the management is entirely different.—C. H. DIBBERN.

This matter is fully discussed in my new book, and is one of the topics of the times. In producing comb honey the proper use of the wood-zinc queen-excluder is as yet known to few bee-keepers, comparatively.—G. L. TINKER.

You do not say whether comb or extracted honey. I suppose that somewhat different methods might be employed, according to the kind you are after. I suppose, also, that different methods might be profitably employed at different seasons of the year, in working for either.—EUGENE SECOR.

I do neither. I want a standard-sized brood-chamber full of brood and honey. If I had to do either, I should "expand," as

that plan will lessen the desire to swarm. I have tried contraction in several cases this season, and in every case but one the bees have swarmed in a week or ten days—I mean my swarms treated in this way have swarmed again.—G. W. DEMAREE.

Both. The brood-chamber should be at its maximum size at that time of the year when rearing bees that are to be workers right in the honey harvest; after that time, when the honey harvest is on, contraction is very valuable.—JAMES HEDDON.

The question is indefinite. When bees are being reared to gather the "surplus" as it comes, to "expand" the brood-chamber is the proper "method." When the honey-flow comes, and it is to be secured in sections, "contract" the brood-chamber, so as to compel the bees to store the surplus above it. A judicious method would therefore require both expansion and contraction.—THE EDITOR.

### The Weight of Sections when Selling Honey.

Written for the American Bee Journal

QUERY 723.—Should any allowance be made for the weight of sections, when weighing and selling comb honey?—B. E. E.

No.—EUGENE SECOR.

No.—C. H. DIBBERN.

No.—H. D. CUTTING.

No.—MRS. L. HARRISON.

No.—DADANT & SON.

No, never.—JAMES HEDDON.

Not unless they are extra heavy.—M. MAHIN.

No; they should be considered a part of the package.—J. M. SHUCK.

It is not the general custom.—C. C. MILLER.

No, the sections go as honey.—R. L. TAYLOR.

That depends upon how well they are filled.—J. M. HAMBAUGH.

In our local markets here, the filled sections are sold by the piece, and not by weight.—J. P. H. BROWN.

NO; no more than for the packages you buy groceries in.—A. B. MASON.

No, not if made of the light material mostly in use.—G. L. TINKER.

It is not the rule here, and I do not think that our light basswood and poplar sections should be classed as tare when selling honey.—G. M. DOOLITTLE.

The weight of sections is a mere trifle, and in my judgment should not be allowed for, as they make a pretty and convenient case in which to carry the honey, and as such are worth more than their weight.—J. E. POND.

I think not. The section weighs very little—it is an indefinite quantity, and the price of honey is so low that I am sure we need lose no sleep if we sell with the sections thrown in. I think that no purchaser will ever speak of it.—A. J. COOK.

This is a matter for the "trade" to govern. If a person sells by the "pound," the gross should be deducted, and the honey should be sold by the pound, exclusive of the wood. In other words, if a customer orders 100 pounds of honey in "one pound sections," he is entitled to 100 pounds of honey exclusive of the boxes. But if he buys the sections at so much a piece, the deal is fair. You can easily see that if all

the sections are to be called a "pound," what an inducement there is for light weights.—G. W. DEMAREE.

No; surely not. The very little weight of wood is less than  $\frac{1}{4}$  of an ounce, and is as necessary to the protection of the honey while being transported by the consumer, as the paper around a package of groceries. Any one who would pick at the weight of the ordinary section on a pound of honey, must be a very small specimen of humanity.—THE EDITOR.

### CLUBBING LIST.

We Club the American Bee Journal for a year, with any of the following papers or books, at the prices quoted in the **LAST** column. The regular price of both is given in the first column. One year's subscription for the American Bee Journal must be sent with each order for another paper or book:

	Price of both.	Club.
The American Bee Journal.....	\$1 00....	
and Gleanings in Bee-Culture....	2 00....	1 75
Bee-Keepers' Guide.....	1 50....	1 40
Bee-Keepers' Review.....	1 50....	1 40
The Apiculturist.....	1 75....	1 65
Bee-Keepers' Advance.....	1 50....	1 40
Canadian Bee Journal.....	2 00....	1 80
The 7 above-named papers.....	5 25....	5 00
and Langstroth Revised (Dadant) 3 00....	2 75	
Cook's Manual (1887 edition) 2 25....	2 00	
Quinby's New Bee-Keeping. 2 50....	2 25	
Doolittle on Queen-Rearing. 2 00....	1 75	
Bees and Honey (Newman). 2 00....	1 75	
Blinder for Am. Bee Journal. 1 60....	1 50	
Dzierzon's Bee-Book (cloth). 3 00....	2 00	
Root's A B C of Bee-Culture 2 25....	2 10	
Farmer's Account Book.....	4 00....	2 20
Western World Guide.....	1 50....	1 30
Heddon's book, "Success," 1 50....	1 40	
A Year Among the Bees.....	1 50....	1 35
Convention Hand-Book.....	1 50....	1 30
Weekly Inter-Ocean.....	2 00....	1 75
Toronto Globe (weekly). ....	2 00....	1 70
History of National Society. 1 50....	1 25	
American Poultry Journal.....	2 25....	1 50
The Lever (Temperance).....	2 00....	1 75

Do not send to us for sample copies of any other papers. Send for such to the publishers of the papers you want.

**Globe Bee-Veils.**—Here are two letters received—just as the forms are closing, and are about like scores of others, showing how the Globe Veils suit those who have them. Not one objection has ever yet been received:

Send me two more Globe Bee-Veils for my neighbors. I like mine very much.—J. B. DUNLAP, Rochester, Ind., July 17, 1890.

The two Globe Bee-Veils came by return mail. Thanks for promptness. I find them just as neat and clean as new (the soiling is so slight). They are indeed sure protection against bee-stings, mosquitoes, etc.—JOHN HAGER, JR., Arabi, La., July 16, 1890.

**Posters** for the AMERICAN BEE JOURNAL, printed in two colors, will be sent free to all who can use them. They are handsome, and will "set off" an exhibit at Fairs. It will tell bee-keepers how to subscribe, for "Subscriptions Received Here" is quite prominent at the bottom.

We will also send sample copies of the BEE JOURNAL, for use at Fairs, if notified a week or ten days in advance where to send them.

## CORRESPONDENCE.

### LARVAL FOOD.

#### A Consideration of the Food of Larval Bees.

Address at the British Bee-Keepers' Association  
BY MR. THOS. WM. COWAN.

In April, 1887, I brought before your notice a work of some importance inasmuch as it was one that was about to clear up a rather difficult problem, that had caused a good deal of controversy. The work I allude to was that of Dr. A. de Planta, which gave the results of his chemical investigations into the nature of larval food. To fully appreciate the value of these researches, it would be as well if I gave you, as briefly as possible, the history connected with the subject. It has been generally the accepted idea that the food given to the larvæ was partly digested in the chyle stomach. This was the theory of Dufour, and was even mentioned by Swammerdam before.

Leuckart also held this view at first, but when the glands were discovered he thought he was not quite satisfied with the semi-digestive theory, and suggested that the larvæ were fed with a secretion from the different glands.

In the honey-bee there are four pairs of glands: two pairs in the upper part of the head, and called systems 1 and 2; one pair in the thorax called system 3; and one pair in connection with the jaws, called system 4. These glands have been described by different observers, but it was Schiemenz who, in 1883, published the most complete work on the subject. Schiemenz was a pupil of Leuckart, and was requested by him to investigate the glands of bees, especially with respect to their being the producers of brood food. The work as far as regards the description of the glands is most accurate, and shows an immense amount of energy and perseverance, for I must tell you that investigating such delicate organs as the glands of bees requires considerable patience and manipulative skill.

Although this part of the work is accurate, when he comes to treat of the functions performed by these glands he seems to have gone quite astray, and I believe it is because he started upon the work with the preconceived idea that these glands actually produced the brood food, as Leuckart had suggested. But he is not the only one, for others who have copied Schiemenz and Leuckart have fallen into the same error.

Then Leuckart discovered, in 1855, that the worker larvæ were fed with one kind of food the first three days of their existence, and stated that after that they were fed on pollen and honey, or, in other words, that they were weaned after the third day. Larvæ intended for queens were, on the other hand, provided with an abundance of the same rich food during the whole of this larval existence. Drone larvæ were supposed to be weaned in the same way as worker larvæ. This theory was to a certain extent supported by the analysis by Schlossberger of the larval food, but he having food given to him from the different cells all mixed, and supposing it to be the same throughout, analyzed it in one mass, consequently his analysis was of no practical value whatever.

On the other hand, there was another school of thought headed by Dufour. Those belonging to this school thought that the food of the larvæ was partially digested by the nurse-bees, and that these bees are the young bees in the hive. It was for a long time difficult to understand how this was done, but Schonfeld took up the matter, and from 1854 was at work at it, making investigations and experiments without number. His investigations have been described in the *Bienen-Zeitung* from the years 1854 to 1883.

From practical experiments he found that if he mixed indigestible substances in the syrup on which bees were fed, that these substances reappeared in the larval food, even within six hours, showing that this food could be nothing but chyle, and not a secretion; for if it were a secretion, as these indigestible substances were not able to pass through the walls of the stomach, they could not have appeared in a glandular secretion, and they would not have been found in the larval food. Their presence in the food confirmed Dufour's theory, and completely upset that of Leuckart and his school.

Schonfeld did more—he demonstrated how the food was ejected into the cells. The honey-stomach is a globular sac with the œsophagus at one end, and an opening to the chyle stomach at the other end. This opening has a valve called by Burmeister stomach-mouth (or *magenmund*), and Schonfeld showed that by means of this mouth the bee is able to take honey and pollen when it requires it, or when it is closed can force the honey through the œsophagus into the cells.

Below this stomach-mouth is a neck and an infolding of the upper part of the chyle stomach. This, Schiemenz supposed was a valve, but Schonfeld has shown that it has quite another use, and is actually brought into play

when ejecting brood food. When honey is being forced out, the stomach-mouth is closed, and the muscular pressure on the walls of the honey-sac causes the honey to pass through the œsophagus. On the other hand, when brood food has to be ejected the stomach-mouth is open, and it is brought up to the opening of the œsophagus, so that the chyle stomach communicated directly with this, and the food passes into the œsophagus without passing through the honey-sac. In such a case the neck folding into the chyle stomach is drawn out, and the infolding takes place in the honey-stomach.

It is very natural to suppose that these investigations caused a good deal of controversy, and there remained only one thing to be done, and that was a chemical analysis of the food of the larvæ in various stages. This work was undertaken by Dr. de Planta, who was not at all satisfied with Schlossberger's analysis. He has been at work for several years in trying to settle the question, and has had considerable difficulty in carrying out his investigations. It was not an easy matter to obtain the large quantities of food he required, and keep a careful account of the food at different days of development of the larvæ.

You may form some idea of the magnitude of the work when I remind you that I stated in 1887 that he had to operate on 120 queen-cells, 4,000 drone-cells, and 10,000 worker-cells. Since then he has been carrying on his experiments, and has operated on 4,000 more worker-cells, because his results being so different to what larval food was supposed to be by Leuckart, he determined to continue his experiments. Leuckart stated that the larvæ were weaned by having pollen and honey added to their food after the third day, but Dr. Planta failed entirely to find any pollen in the food of worker larvæ, and in repeating his experiments he confirmed his previous ones in this respect.

Now his analysis shows that the different larval foods vary in the following proportions:

QUEEN.			Per cent.
Albumen.....			45.14
Fat.....			13.55
Sugar.....			20.39
DRONES.			
Under 4 days.		Over 4 days.	Average.
Albumen.....	55.91	31.67	43.79
Fat.....	11.90	4.74	8.32
Sugar.....	9.57	38.49	24.03
WORKERS.			
Under 4 days.		Over 4 days.	Average.
Albumen.....	53.38	27.87	40.62
Fat.....	8.38	3.69	6.03
Sugar.....	18.09	44.93	31.51

This table shows the great variation of the food, not only in the different bees, but also at different stages of



their larval existence. The drone larvæ receive a considerable addition of undigested pollen in the second period, whereas the queen and worker larvæ have none but what is digested in the chyle stomach. Both drone and worker larvæ have a large addition of honey to their food in the second period, whereas the queen larva has no difference made in her food. The food is produced in the chyle stomach from honey and pollen consumed.

In a letter to me from Dr. de Planta, asking for some explanations, he says that two things must first be separated—(1) pollen as found in nature, and which is easily detected by the microscope; and (2) pollen which has been digested in the stomach, as with us meat, cheese, etc. In this last form, invisible yet present, it forms with honey the food of the queen larvæ, and that of the first period of the drone and worker larvæ. The worker larvæ get a larger proportion of albumen than even the queen, and Dr. Planta considers it is because of the small size of the cells, and the small quantity of food administered to them by the nurses necessitating a more nourishing form of food for their development. The drones are therefore weaned from the fourth day, by the addition of natural pollen in an undigested state. The worker larvæ are also weaned, but in a different manner, for instead of having undigested pollen given them they continue to be fed on digested food, with the addition of honey only.

Under the microscope at no stage of development of the queen or worker larvæ was any free pollen found, nor any skins. Dr. Planta repeated the experiment over and over again with the same result, and those who have stated that worker larvæ are weaned by having undigested pollen added to their food in the second period of their existence have erred, or have repeated Leuckart's error.

Very different is it with the drone larvæ. After the fourth day, a large amount of pollen in an undigested state was found. Prof. Kramer made several microscopical examinations, and found in one milligramme of larval food, occupying a surface of 1,440 mm. square, the immense number of 15,000 pollen-grains. Besides this it will be seen from the table that a considerable quantity of sugar in the shape of honey is added to the food. Dr. Planta considers this method of feeding the drone larvæ as a saving of time to the workers. The first four days they feed them liberally on rich food, to rapidly develop the larvæ, and then, when they are strong enough, they give them pollen and allow them to digest this themselves, and reduce

the quantity of digested food they give them. It is easy to understand the saving of time to the bees by bearing in mind the large quantity of pollen found in the food.

Dr. Planta is the first who has made a separate analysis of the food on different days, and of the different bees, and he is also the first who has by his experiments corroborated Schonfeld's opinions.

It is easy to understand how former observers have gone wrong; if all the food taken from worker and drone cells over four days is mixed up, of course pollen will be found, and this misled Leuckart and those who have followed him.

These experiments of Dr. Planta show that the food of the larvæ is a digested food, and fully corroborate Schonfeld's theories—that the bees also are able, and do vary it in various proportions, whereas, if it were a secretion only, as claimed by Schiemenz, it could not vary to such an extent. I do not wish you to understand that the glands take no part in the feeding, for Schonfeld, Holz, and others, admit that secretions may be added to the food; but what I want to impress upon you is, that they do not form the actual mass of the brood food, as taught by Schiemenz and his school.

The subject may not be interesting to every one, but these experiments have a practical bearing on bee-keeping, more especially on queen-rearing. Leuckart found that the first traces of the ovaries appeared in the larva after the third day of its leaving the egg, and this is just the period at which the change of food takes place. In the larva intended for a queen, the rich food is continued abundantly to the last, and this has the effect of fully developing the ovaries. On the contrary, the change of food in the worker larva stops this development. If, therefore, we want good queens, we must see that we rear them from larvæ that have been abundantly fed on the rich nitrogenous food from the commencement of their existence.

There are other aspects of the question, but I have not the time to enter into them; I think I have said enough to make you see the value of this work. The question of brood food, I think, is now definitely settled, and we may take it for granted that it is produced in the chyle stomach, and ejected by the mechanism I have described.

The delivery of the foregoing address by Mr. Cowan, was followed by this interesting discussion of the subject under consideration:

Mr. Grimshaw said he felt sure they would all feel grateful to Mr. Cowan

for his excellent address. Speaking for himself, however, he felt pained because Mr. Cowan had shaken to its foundation one of his (the speaker's) pet beliefs. He (Mr. Grimshaw) agreed that the food given to worker larvæ was a production of the chyle stomach, and was, so to speak, pumped back again, but he could not but think that the highly-charged nitrogenous material which the queen larvæ fed upon was so entirely different from the food Mr. Cowan had told them about as prepared in the chyle stomach, that it must be evolved by some separate process. There were four sets of glands, and he would ask what were the uses of them if not to provide the highly nitrogenous food the queen was fed upon? Mr. Cowan said for deglutition and assimilation, but that was not sufficient; and until a proper use for these glands was found other than the one hitherto supposed, he must cling to the old theory. At any rate, the analysis of the various foods was so startling that he was bound to give the matter serious thought, and express his opinions with great deference to the quoted authorities.

Mr. Cowan said that Schiemenz supposed all the glands to take part in the production of the brood food, although No. 1, he said, was the principal source; but Schonfeld did not hold that view. In the first place, the glands were very small in proportion to the quantity of the food—in fact, too small to be able to secrete the immense amount of food that was necessary, to say nothing about its variation in the different larvæ.

Mr. Grimshaw believed that heredity among bees was carried down by means of brood food, and it was necessary for his argument that the food given to the brood should pass through the system of the nurse-bee in order that heredity might be transmitted.

He held that the instincts, which the worker-bees had, could only be handed down from worker to worker by food passed through the system and given to the brood; that such food was a secretion of one or two special glands, but that the rich nitrogenous food was a distinct mammary secretion. The establishment of Mr. Cowan's theory would totally upset his (the speaker's) view of heredity.

Mr. Lyon understood Mr. Cowan to say that there was an absence of pollen remains in the food supplied to bees up to the third day. If so, that would support Mr. Grimshaw's theory of secretion. After the third day the secretion was discontinued, and the semi-digested chyle pumped through the œsophagus into the cells for brood nourishment.

Mr. Cowan said that in the case of the drone larvæ only was free pollen found after the third day.

Mr. Grimshaw explained the absence of pollen by stating that there was a filtering medium which prevented the husks being pumped back, the feeding valves being provided with hair, which would stop the regurgitation of the pollen.

Mr. Lyon remarked that Mr. Cheshire had been able to find out what flowers had bloomed in any particular district by making a microscopical examination of larvæ showing the remains of pollen husks.

Mr. Cowan said Mr. Cheshire had stated that in worker larvæ there was undoubtedly pollen added to the food, and that the pollen-grains were living and found in a growing condition, which was a mistake.

Mr. Meggy said his views exactly coincided with Mr. Grimshaw's, and he thought that in the present state of knowledge they might fairly accept a part of each of the theories advanced.

Mr. Cowan said that Schiemenz and Leuckart distinctly stated that the food was the produce of the glands, while Schonfeld had shown that it was possible for the bees to eject the food from the chyle stomach. The latter authority, however, did not deny that the glands contributed to the food, but he did affirm that they were not the sole producers of brood food. He (Mr. Cowan) would like to ask Mr. Grimshaw how he supposed the bees forced out the glandular secretion?

Mr. Grimshaw could not answer that, but said many extraordinary facts could not be explained. He would ask how it was that the fertile worker by simple excitation of the ovaries was able to lay drone eggs?

Mr. Lyon would like to know if heredity was controlled by food, whether there would be any difference between the eggs of a Ligurian queen when nursed by black bees, and the same eggs when nursed by Ligurian bees?

Mr. Grimshaw said no doubt there would, but of course special changes could not be traced in two generations, but might take hundreds of years to produce. Mr. Sambels had given important evidence on that point. He believed that the character of the bees (whether quiet or vicious) was governed not so much by the queen, as was generally supposed, but by the nurse-bees.

Mr. Cowan said, with regard to the salivary secretion in the human being, we would spit that out; but the bee had no power of doing the same, but could only pour out its secretion on the foods coming in, and the outlet is just in the right position for this.

Mr. Glennie and Mr. Grimshaw agreed that if a vicious colony were started in the apiary, and a succession of vicious bees followed, each colony would probably become worse and worse, and it would be better to destroy the lot and start afresh. There was no doubt that vicious bees were much more prevalent at the present time than formerly, a fact to which Mr. Lyon bore testimony.

Mr. Cowan exhibited a diagram of bee-clustering during winter, showing the variation in temperature of the cluster side by side with the variation of temperature in the open air.

On the motion of Mr. Lyon, a hearty vote of thanks was passed to Mr. Cowan for his interesting and instructive address.—*British Bee Journal*.

## BEE-HOUSES.

### Great Advantage to be Derived from House-Apiaries.

Read at the Colorado State Convention  
BY H. KNIGHT.

Bee-houses, or more properly speaking, house-apiaries, were selected for my subject because, as many of you know, it is one of my hobbies, and a successful one.

By "bee-house" I do not mean a shed with the out-door hives put under it; neither do I mean a house in which to store honey; but a house with the hives arranged in tiers around the inside, each hive having an entrance extending through to the outside.

Eastern bee-men, on account of moths and dampness, have pronounced them a failure, until recently I notice that several are using them successfully. One man in Kansas has even taken out a patent for a bee-house. His idea is to have it lathed and plastered. I do not know whether he has the walls decorated with gilt paper, with a fancy border or not, but I do know that in my experience all that is necessary is inch boards for the walls, the hives to set back 2 or 3 inches and connected by runways. The space between the hives and wall admits of a passage of air which keeps the hives much cooler than if they were close to the outside.

Mr. A. I. Root says that smoke from the smoker is more troublesome, as it cannot pass off quite so readily, which I will have to admit, although if large openings are provided in the ends, no serious trouble need be feared.

Many bee-men say: "I want the hives close to the ground, because the bees can bring in more honey; they can fly down instead of up with their loads." I say to them: "How is it

that we had the past season 11 colonies that gave us from 190 to 200 pounds each, in one-pound sections, and 10 of those hives were from 3 to 9 feet from the ground?"

Another bee-keeper says: "When the entrances are so close together (2 feet) the bees cannot locate their hives, and they also interfere in flying to and from their hives." Now, when the alighting-boards are of different colors and shapes, the bees make no mistakes by going in at their neighbors' doors. I have watched them closely many times to see if they could fly without a collision, and have come to the conclusion that they can switch off just right every time.

One of our Rocky Mountain bee-men, on going into one of our bee-houses, asked if those on the north and west did so well as those on the other sides. His grand-father was a bee-keeper, and had told him that the hives must front either south or east. To all those of such foggy notions I ask, How is it that the bees on the west side of all our bee-houses give us the most honey? But such is the fact, and I do not know why, unless it is the mountain scenery in view from their front-doors that puts extra vim and business into them.

One reason why I think the house-apiary far in advance, is that any bee-keeper can handle double the number of colonies, as we have everything almost within arm's length, and when we take off honey, which every true bee-keeper delights to do, it is not scattered all over an acre of ground, but is all close together in the bee-house.

Another very important feature is that we can, by locking the door, feel pretty certain that our hives will not leave us before our next regular visit; and too, where we have out apiaries, we do not have to bring them home to winter, and then haul them out again in the spring, as many in the East do. We can leave them on the summer stands, and under lock and key. A bee-house, too, is even better than a chaff hive, both for wintering and summering, as the atmosphere in the house, where there are a large number of colonies, is kept at a more even temperature.

It is an undisputed fact that quietness is essential during our no-honey season. A changeable temperature in the hives causes restlessness, consumption of honey, old age and death to many of the bees. An even temperature, somewhat below the freezing point, is what is wanted to cause the bees to relapse into that semi-torpid condition of successful wintering. A bee-house comes the nearest, excepting a cellar, to producing this state, and is



therefore to be preferred to out-door hives.

Another advantage offered is that the bees can be handled with less danger of robbing, as the end of the house in which we want to work can be closed and the opposite end left open for light and for the bees to escape. It is also much cooler for the operator. While it is not alone for the bee-master, but for the bees also, that we want the shade, as oftentimes the out-door hives will get so hot that the bees will hang out, the combs melt down, and the bees that do not get stuck in the mess, will take their departure to find some hollow tree that is kept cool by the overhanging branches with their grateful shade.

Six years ago I built my first bee-house. That season I had two, the following season three, and so on until the past season I had five; my smallest house holding 38 colonies, and the largest 82.

After 13 years' success with bees, nearly one-half of which I have had both out-door and in house-apiaries, so much am I in favor of the latter that for my use I shall never make or buy another hive that *must* be used out-doors, although I would add that almost any kind of a hive can be used in a bee-house.

## EXPERIMENTS.

### Report of Some Experimenting by a Young Bee-Man.

Written for the American Bee Journal  
BY S. P. NOLD.

This is the sixth year that I have kept bees, as I may say, for experiments.

1. I bought a colony in a box-hive for \$5, and transferred them to a Mitchell hive. The experiment was a success, though I attributed it to luck, as I knew nothing at all about bees. I could not have picked out the queen had any one offered me a dozen colonies for my trouble. That colony was torn up every week that summer for my inspection. The queen became a common sight to me.

2. I divided this colony, and gave the queenless part a cell (Holy-Land), which proved to be a success. The queen mated with a hybrid drone, and made the crossiest cross I ever had.

3. I tried to use comb foundation, and would find each new hope melted down or twisted out of shape. Bee-keepers are hard to discourage, however, and now I use it in full sheets, and always wire my frames—another experiment.

4. The next thing to try was introducing queens, so I began with Italians, and introduced by Heddon's, or rather his "Friend's" plan. I like it, and have never lost a queen by using it. I tried two fine Italians by the "Peet process," and lost one, but I admit that my carelessness was partly to blame. I do not like the method. Heddon's Friend's plan is better. His theory is correct—"they do not realize that they have been queenless."

5. I transferred by Heddon's plan, and will now use no other. Cutting up egg larvae, and dripping honey is too dauby and wasteful.

6. I took a weak colony and put it on a strong colony's stand; then I took a box and scoop-shovel, and scooped up perhaps a peck of bees that were hanging out of three hives of a neighbor's (he said I might), and mixed them with the weak colony. For a week they hung out day and night, and were too lazy to move for smoke, so I gave them a frame of eggs and larvae, and a pint of syrup. *They have gone to work and do not hang out.* I believe that hanging out is a lazy habit. Will some one who has a good many bees, try this "scooping up" plan of strengthening weak colonies, and report? It is very simple.

7. I fixed up an invertible brood-nest, and tried inverting, this summer. I find it a success, and believe that invertible surplus-cases would be, too, but I have not tried them. After inverting the hive of a good colony, I put on three surplus-cases with full sheets of foundation in pound and half-pound sections. For experiment, then, I did not look inside of that hive for exactly four weeks (in June), and when I did look, I felt puffed up, and looked that way. They did not swarm, but have stored 30 pounds of honey—a good yield here for a season.

I winter my bees without protection, more than that they are put on the south side of the building. I have never lost any. The coming winter I will try packing with straw.

These experiments were begun when I was but twenty years old, and all were performed without aid or suggestion from any one save through books and periodicals. All bee-keepers should read continually.

I have had as high as 10 colonies, but always kept them as a side-issue. Some day I will buy out a farmer's lot, and go into the business.

Let me say to young bee-keepers—it will pay you to have one colony to experiment with. If it makes you no money, it will enable you to get the knowledge necessary to work your others to the best advantage.

Coffeyville, Kans., July 21, 1890.

## MARKETING.

### How to Prepare Comb Honey for the Market.

Read at the Oxford, Ont., Convention  
BY W. COUSE.

In attempting to prepare an article on this subject, it will be difficult to find ground that has not been gone over previously by some person; but I feel that there are bee-keepers who do not pay nearly enough attention to this matter, and they are not only losers themselves, but the grocers they sell to and other bee-keepers are often affected. If a grocer receives a lot of poor-looking honey, he does not readily sell it; and had he received nicely-done-up honey of good quality, he would have likely sold much more honey, and have caused a greater demand.

It is somewhat difficult to say just when or where to begin to prepare honey for market—perhaps the best time would be before we have any. To be able to have the choicest comb honey it must be built in nice, white sections, and to find what a nice white section is, we can ask different supply dealers for samples, and there will likely be some suitable samples of sections received to choose from. Another article of importance is nice, thin foundation. With this fastened in the sections, they have a neat appearance.

Now, before placing the supers as filled with the sections on the hives for the bees to fill, you would likely have nicer comb honey if you scrape all the propolis possible from the hive and fixtures, as when the bees travel over the propolis, there will be some stick to their feet and soil the cappings of the honey and sections.

Some may think the propolis of little injury, but to those they might take the following precaution, which a gentleman claimed to have taken that showed some nice honey at one of our country fairs. A gentleman showing honey in competition with him wanted to know how he got such nice white comb, "Well," he says, "If you do not tell any person, I'll tell you. I just fasten little mats at the entrance of the hives for the bees to wipe their feet on before going in." Now I do not know whether the mats were placed by the second gentleman or not, but I know that there are many that do not trouble with the mats, and there are enough, and too many, that do not scrape the propolis off.

I usually find that comb honey taken from a colony with new combs, frames and hive, is nicer looking than if taken from a colony without new combs, frame and hive. With these precau-

tions, and if their be a good yield of bright honey, you will be apt to have something fit for market. When you have the honey nicely filled with sections, you will require nice shipping-crates to hold from 6 to 18 sections. Before putting the sections into the shipping-crates, the propolis will have to be again looked after and scraped, and it is always better to have the manilla-paper dish in the bottom to hold any leakage that there may be.

In regard to the size of section to use, I believe a section that holds a pound of honey, or as near it as possible, is the best. I know there are many bee-keepers that use a section to hold an ounce or two less than a pound, but the objection I find to this is that it is sometimes used to deceive buyers. Sometimes the grocer is deceived, and sometimes he is the deceiver. I believe the grocer often buys sections of honey for a pound, and they are short, and the bee-keeper may sell him those sections at a cent or so less than his neighbor sells his sections, but the section that costs the most may be the cheapest. I know all bee-keepers do not sell sections by the piece, and I believe it to be generally unfair to do so.

I have no doubt many bee-keepers have had grocers ask them for sections weighing an ounce or so less than a pound, as they can sell them for about the same as one that weighs a pound; but they want to buy the honey by weight from the bee-keepers, all the same, and no doubt there are bee-keepers who get sections cut so that they can sell them for a cent or so less than their neighbors, who have them weigh a pound.

My best customers are men that wish sections that weigh a pound, or as near it as possible, and they buy by the pound and sell by the pound. Are not these men deserving of confidence much more than the man who asks you for a section less than a pound to sell by the piece for a pound? I prefer to deal with the man that wishes to sell by the pound.

It would perhaps be well to give you an account of a purchase made last winter, as an example. Not having enough comb honey to supply the demand, I wrote to a gentleman that I heard of having comb honey for sale at a certain price, and I sent him an order for so many pounds of first-class honey at a certain price. Well, the honey did not come as ordered, it was not first-class, it was dark, the comb soiled, the sections not cleaned of the propolis, shipped in a grocery-box, some sections broken, and all generally daubed, and the weight short by about an ounce and a half per section, although the invoice was by the sec-

tion for the amount I offered by the pound.

In closing this article, I would ask all to endeavor to have their comb honey done up as neatly as possible, and of good sample, for if done up as the above lot, you need not expect a good price for your honey, and you will demoralize the trade to a certain extent, and not only be injured yourself, but you would be the cause of injuring others; you would only be able to sell to a man once, and when you had made one sale to each of the grocers or bee-keepers in your neighborhood, you would have to look for new customers further away, or eat the honey yourself.

Streetsville, Ont.

## CARNIOLANS.

### Experience with these Bees for Five Years.

*Written for the American Bee Journal*

BY C. L. FISHER.

I think that the article on page 488, by Mr. S. A. Shuck, demands attention. He condemns the Carniolan bees without trial, which at least shows malice.

He says he purchased one select tested Carniolan queen (which it seems the bees considered almost old enough to die) from which he reared 35 queens, which he says were all mated, making the working stock hybrids, of course. Then he tells how they behave—like the worst hybrids he ever saw, by thieving, mutilating cappings, etc.

Next he acknowledges himself behind the times, by allowing his bees to follow their natural impulses, and swarm whenever they take a notion to do so. Then he compares his hybrids with his Italians, calling the hybrids Carniolans, and he closes by guessing that he shall be a certain number of pounds of honey short, by having a streak of Carniolan blood in his apiary. "Consistency thou art a jewel"—but wanting here.

Now I have had five years' experience with the Carniolan bees, and three years of the time I have had from 50 to 100 or more colonies. I have also had Italians in the same yard during all that time, and in no instance have my best Italians in honey gathering or breeding, equaled my best Carniolans.

I procured queens of both races from breeders of note, besides rearing many.

My motive in writing this is simply to see justice done the best race of bees (and their breeders) that I have any knowledge of.

South Deerfield, Mass.

## BEE-CULTURE.

### Management of the Apiary so as to Make it Pay.

*Written for the Prairie Farmer*

BY MRS. L. HARRISON.

The drouth was broken on July 12 by a fine rain, and the weather has been exceedingly warm since, and the bees have been working industriously on the sweet clover. Some plants yield honey only a few hours each day—awhile in the morning or during the heat of the day; but bees are now working upon sweet clover, "from early morn to dewy eve." The yield from this source is not large, but continuous, during a time when there is little or none from any other source, and is sufficient to keep up brood-rearing, thus providing for workers to gather the fall harvest.

A neighbor bee-keeper came into our apiary lately, and used Bible words out of place, denouncing bees as a delusion and a snare. Now this is very silly, for all business has its ups and downs, and those who hold on, with a grip like a bull-dog, are the ones who "get there."

Some benevolently disposed persons in the city of New York, at one time, made an investigation to ascertain the cause of poverty, and ascertained that it was not owing to the lack of ability to do many things well, but because they flitted from one thing to another. I have known farmers, who became discouraged owing to the failure of crops, and moved into towns and cities, where they were known as laborers and teamsters, and in a short time were besieging the overseer of the poor, and the benevolent societies for assistance, and their household goods set into the streets for non-payment of rent. It is impossible for a man to support a large family by day labor, and if they had stuck to the farm, and worked it, they would have had plenty to eat, and their children would be producers instead of consumers only.

Bee-keepers, stick to your hives, and have your colonies strong, to be ready in case of a flow of honey, which may come upon us for harvesting unawares. If you sit grumbling, your dishes may all be upside down when the shower comes, and you will not get a drop. The same applies to horticulturists, gardeners, and farmers; and it would be well for all to follow the advice of Cromwell, "Trust in God, and keep your powder dry."

"Keep all colonies strong" is Oettl's "Golden Rule," and the last words to be found in "Langstroth's Revised." Whoever succeeds in doing



this, acquires the title of bee-master, and will ultimately reach the goal—some sooner, others later.

A bee-master can generally tell at a glance the condition of a colony. Where a colony is working energetically, and the hive is very populous, it is good evidence that all is right within. A man once selected a colony from our apiary in early spring, choosing it because so many bees were on the outside in the portico, and afterwards requested us to exchange it, which we did. This colony was queenless, and having no "babies" to feed, were outside ready to welcome any robbers that might come along. If they had had a queen they would have had plenty of work to do in the hive and fields, and not been lounging in the porch.

Old colonies that have swarmed need looking after; many times they swarm unbeknown to their owner, and are very weak in consequence. A laying queen may be found in one corner of the hive with a few bees, and the combs full of honey and bee-bread. To let them remain in this condition during the season is very poor economy for they will pay no rent for the use of the hive and comb, and must perish the following winter.

In building up such a colony, I would let outside combs remain if they were sealed full of honey, and remove all containing no brood. I should not expect to find more than one containing brood; with a division-board I would confine them to one side of the hive, leaving room for four frames. If the season was like the present one, I would uncap a frame of the honey, and after removing a frame of brood from the centre of a strong colony, put it in its place where it would be used in rearing brood.

I would take a frame of chipping brood and brush off all the bees, for if removed with the bees they might destroy the queen. In a short time the young bees will be ready for business, and another similar one may be given them. The strong colony that parted with one frame of brood will not be injured, while the one to which they were given will be strong to gather fall honey and populous enough for winter. My motto is to make every hive pay its rent.

Where a hive contains a drone-laying queen, pinch off her head and exchange the combs in the same way, only if it is desirable to do so take combs covered with bees, being careful not to deprive a colony of its queen. In this way a hive can be filled up at once. Where there are drone-layers it is the best way to get rid of them that I know; that is, exchange their combs for those filled with brood and covered

with bees. If a queen is introduced at this time, she should be caged until the old bees fly home, for they might destroy her. They will rear a queen with the material at hand, if left to themselves. If the owner desires to introduce a choice cell, and waits until they have built queen-cells, it will be respected; but if given to them before, they will tear it open and destroy the embryo queen.

Peoria, Ills.

## CONVENTION DIRECTORY.

### 1890. Time and place of meeting.

Aug. 19.—Northern Illinois, at Harlem, Ills.  
D. A. Fuller, Sec., Cherry Valley, Ills.

Aug. 29.—Haldimand, at South Cayuga, Ont.  
E. C. Campbell, Sec., Cayuga, Ont.

Sept. 10.—Ionia County, at Ionia, Mich.  
H. Smith, Sec., Ionia, Mich.

Oct. 20-31.—International American, at Keokuk, Ia.  
C. P. Dadant, sec., Hamilton, Ills.

Oct.—Missouri State, at Mexico, Mo.  
J. W. Rouse, Sec., Santa Fe, Mo.

In order to have this table complete, Secretaries are requested to forward full particulars of the time and the place of each future meeting.—THE EDITOR.

### International Bee-Association.

PRESIDENT—Hon. R. L. Taylor, Lapeer, Mich.  
SECRETARY—C. P. Dadant, Hamilton, Ills.

### National Bee-Keepers' Union.

PRESIDENT—James Heddon, Dowagiac, Mich.  
SEC'Y. AND MANAGER—T. G. Newman, Chicago.

## SELECTIONS FROM OUR LETTER BOX

### Bees in a Church-Spire.

An item on page 483 calls to mind the fact that three years ago a swarm of bees entered the spire of the Congregational church at Magnolia, Iowa. They have passed three winters there, and appear to be doing well. The church stands where it is exposed to our severe storms from all directions. The spire is covered with inch lumber, which is mostly covered with tin. The cavity occupied equals ten or more ordinary hives. The large cavity does not prevent swarming, as quite a number of swarms have been secured by persons living near.

P. M. RICHARDSON.  
Magnolia, Iowa, June 22, 1890.

### Price of Honey—Golden-Rod.

Basswood extracted honey should bring 10 cents a pound. I am not producing any comb honey, but it ought to bring 15 and 18 cents. There is not half enough honey to supply the market, and the bee-keepers have had a hard pull to get the bees through. I have taken 55 pounds of basswood honey to the colony, spring count, and I expect to get a good yield from that splendid flower—the golden-rod. So, bee-keepers, put on the sections, and give the bees a chance. If the golden-rod honey is extracted, it should be well ripened, for the flavor is much better.

FAYETTE LEE.  
Cokato, Minn.

### No White Honey to Speak of.

The basswood is gone. There is no white honey to speak of in Erie county this year. I did think that I would get a small run on basswood. I may have 200 pounds of honey from 80 splendid colonies on June 15. I had over 4,000 pounds in 1889, from a less number.

A. A. HARRISON.

McLane, Pa., July 25, 1890.

### A School of Apiculture.

I could no more do without the AMERICAN BEE JOURNAL than I could without my bees. I find it above criticism—suited alike for all who keep bees in all parts of the world. Its excellent system and style of journalism makes it a regular "school of apiculture."

Xenia, O.

C. E. WOODWARD.

### One of the Vervains.

Will you kindly state, through the BEE JOURNAL, the name of the flower that I send, and whether or not it yields honey? It abounds here in a wild state.

Prairie du Chien, Wis. B. E. BROWN.

[It is *Verbena hastata*—one of the numerous vervains, and has long been recognized as an excellent honey-producer.—Ed.]

### Bees Doing Finely.

I am delighted by the form in which my article appeared on page 489. After reading it, yesterday, I took a ride in the country, and found a "bee-tree" in the corner of a country post-office building, and another in a white oak tree; I was not looking for bees, either. Bees are yet doing finely here; I find bees doing well in what is certainly the very poorest place in the county.

D. B. WIER.

Petaluma, Calif., July 22, 1890.

### Some White-Red Clover.

I send you a species of white clover that I find growing among the red here, wishing to know whether it is a distinct variety, or a mere freak of nature. I notice the bees working on it and also the red clover. I never saw so many bees working on the red clover before—Italians, Carniolans and hybrids alike—about as many as on the common white. The white I send you is mixed with the red, but the bees that gather from the white pass the red by, while those that gather from the red pass the white by. They seem to divide on the "color line." Bees are not more than gathering a living now. The white clover is nearly all dried up, and the basswood gone out, and we are in the midst of a severe drouth, which I fear will kill the white clover entirely, as it did a few years ago. Unless we have a decided change for the better soon, those who were writing, "I look for a splendid honey crop," will have to sing a different song. Bee-keepers are a hopeful people, but they had not better build their castles too high.

J. C. ARMSTRONG.

Bromley, Iowa, July 21, 1890.

By request Prof. A. J. Cook answers the above question. He says:

The white red clover sent by Mr. Armstrong is not a rare freak. Dr. W. J. Beal, in his excellent work on grasses, says: "The petals vary in length, direction taken, and differ in color from a dirty white to pink and bright scarlet." I have seen red clover very dark, even crimson, and as

light as much of our white clover. It blossoms earlier or later, and the tubes vary very much in length. This habit of variation enables us to select and breed new varieties. It is not improbable that by selecting heads with short flower-tubes, we might soon get a variety that bees could easily work on.—A. J. COOK.

#### Bees Making a Living Now.

I put 52 colonies of bees in the bee-cellar in the fall, and took out 52 in the spring—all in good condition. The bees did nicely until the middle of June, but from then on until now I have had to feed them; but they are making their own living now. The white clover was winter-killed, and linden blossoms did not amount to anything. FRED BOTT.

Wabasha, Minn., July 28, 1890.

#### Poor Season for Bees.

It has been rather a poor season for bees. Some have had no swarms or honey. The spring was cold and wet up to June 15; some bees starved at that date. I had to feed some of mine. I have only 4 swarms so far from 28 colonies, spring count, and 400 pounds of comb honey; but I have lots of bees now, and if the weather is favorable, I will get some from golden-rod, as bees work well on it in this State.

EDGAR RICARD.

Canaan Center, N. H., July 26, 1890.

#### Bees are Doing Poorly.

I have 21 colonies; they had but little honey when put out, but I fed them, as they had to live until the first of July, when I do not think there was a hive with half a pound of honey in it. The forepart of June the hives were full of bees, and ready to swarm. It was wet and cold through June, and I do not think that there are as many bees in the hives now as there was the first of June. One man here with 40 colonies paid no attention to them after putting the bees out, and he lost half of them.

C. L. LOVELAND.

Plainview, Minn., July 28, 1890.

#### A Diseased Colony.

There is something wrong with one colony of my bees, as so many of them are dying. They act so strangely; they turn black, and drag one another out, three or four struggling with one bee. Being a novice in bee-culture, I do not know what is the matter. I do not keep bees for profit, but for pleasure; but from what I gather from the BEE JOURNAL, I think that it must be foul brood. I thought at first that they were robbing, and again I thought they were old bees, but the drones dropping dead at the front of the hive dispelled that thought; otherwise the colony seems strong, G. W. SAPP.

Renovo, Pa., July 28, 1890.

[See our reply to Mr. Semke, on page 524 of last week's BEE JOURNAL.—ED.]

#### The White Clover Crop.

When spring opened, my 50 full colonies and nuclei had wintered without loss. They received quite a set back, however, by not getting any honey from the fruit-bloom. Later on, the wet weather with cool nights made the yield from white clover very light, with few swarms. As the basswood bloom is nearly gone, and no honey from this, I think that it will be

safe to report less than one-fourth of a white honey crop from this section; and this will be nearly all stored by the Italians, from what I have heard. I do not think that the blacks will average 5 pounds of white honey per colony, and no swarms. They lack the energy of the Italians, and the difference has been more marked this season than in the good ones. Buckwheat looks favorable, and we may secure something from it. C. RUSSELL.

Conesville, N. Y., July 28, 1890.

#### Honey-Flow was Short.

"If it would only rain." "I won't get any corn." "My potatoes are no good." "My garden is all dried up." Such are some of the expressions heard around here just now, for we have had no rain to speak of for six weeks. We had a small shower which furnished the bees with enough work to keep them out of mischief. The honey-flow was good, but very short this season.

On July 22 we buried our little baby boy. He was only two weeks old.

ED. E. SMITH.

Carpenter, Ills., July 29, 1890.

#### HONEY AND BEESWAX MARKET.

NEW YORK, July 7.—New Southern extracted is arriving freely, but the quality is poor, and prices are declining. We quote from 60@65 cents per gallon. New extracted orange blossom honey, 7@7½ cents. New extracted California white sage, 6@6½c. California light amber, 5¼@5½c. Beeswax, scarce and firm at 29@30c.

HILDRETH BROS. & SEGELKEN,  
28-30 West Broadway.

KANSAS CITY, July 15.—The receipts of new comb honey are light, and demand equal to the receipts. One-pound white comb is selling at 14@15c. Very little demand for extracted at present. Beeswax, 25c.

CLEMONS, MASON & CO.,  
(Successors to Clemons, Cloon & Co.)  
Cor. 4th and Walnut Sts.

CHICAGO, July 8.—Market is bare of honey of all kinds, both comb and extracted. New comb will bring 13c. A little fancy has been sold at 15c. Extracted from 6@8c. Weather is warm, but there is some demand. Beeswax, 27@28c.

R. A. BURNETT, 161 S. Water St.

MILWAUKEE, July 14.—The demand for honey is good for this season of the year. The supply of old crop is fair—equal to the demand. We can quote: White 1-lbs., choice, 13@14c; medium white 1-lbs., 12@13c; dark 1-lbs., good, 10@11c; white extracted in barrels and half barrels, 7@7½c; white extracted in kegs and tin cans, 7¼@8c; dark, in barrels and kegs, 6@6½c. Beeswax, 28@30c.

A. V. BISHOP, 142 W. Water St.

DETROIT, July 8.—No new honey in the market, and no desirable old is left. It is quoted at 10@13c. Extracted, 7@8c. Beeswax, 27@28c.

M. H. HUNT, Bell Branch, Mich.

BOSTON, July 23.—Fancy 1-lbs., 16c; 2-lbs., 15c. Extracted, 8@9c. Honey sales are very slow. We have recently received a shipment from Michigan, of very fine stock, which is an ample supply for the summer.

BLAKE & RIPLEY, 57 Chatham Street.

CINCINNATI, July 9.—Demand is good for the new crop of extracted and comb honey. Judging by present arrivals, there has been a good crop harvested. Extracted brings 5@8c. Comb honey, 12@15c for best white. Beeswax, in good demand at 24@26c on arrival.

C. F. MUTH & SON,  
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Clubs of 5 for \$4.00 to any addresses. Ten for \$7.50, if all are sent at one time.



ALFRED H. NEWMAN,  
BUSINESS MANAGER.

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Subscribers who do not receive their papers promptly, should notify us at once.

Send us one new subscription, with \$1.00, and we will present you with a nice Pocket Dictionary.

Red Labels are nice for Pails which hold from 1 to 10 lbs. of honey. Price \$1.00 per hundred, with name and address printed. Sample free.

Calvert's No. 1 Phenol, mentioned in Cheshire's Pamphlet on pages 16 and 17, as a cure for foul brood, can be procured at this office at 25 cents per ounce, by express.

Send us two new subscriptions, with \$2.00, and we will present you with a "Globe" Bee-Veil for your trouble. (See the fuller notice in the advertising columns.)

The date on the wrapper-label of this paper indicates the end of the month to which you have paid. If that is past, please send us a dollar to advance that date another year.

Please send us the names of your neighbors who keep bees, and we will send them sample copies of the BEE JOURNAL. Then please call upon them and get them to subscribe with you.

Any of the Political Dollar Weekly Newspapers will be clubbed with our JOURNAL at \$1.85 for the two; or with both our HOME JOURNAL and BEE JOURNAL for \$2.50 for all three papers.

As there is another firm of "Newman & Son" in this city, our letters sometimes get mixed. Please write American Bee Journal on the corner of your envelopes to save confusion and delay.

Systematic work in the Apiary will pay. Use the Apiary Register. Its cost is trifling. Prices:

For 50 colonies (120 pages) .....	\$1 00
" 100 colonies (220 pages) .....	1 25
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When talking about Bees to your friend or neighbor, you will oblige us by commending the BEE JOURNAL to him, and taking his subscription to send with your renewal. For this work we will present you with a copy of the Convention Hand Book by mail, postpaid. It sells at 50 cents.

A "Binder" made especially for the AMERICAN BEE JOURNAL, and lettered in gold, makes a very convenient way of preserving the copies of the BEE JOURNAL as fast as they are received. We offer it, postpaid, for 60 cents; or as a premium for two new subscriptions, with \$2.00. It cannot be mailed to Canada.



**CATARRH.**CATARRHAL DEAFNESS—HAY FEVER.  
A New Home Treatment.

Sufferers are not generally aware that these diseases are contagious, or that they are due to the presence of living parasites in the lining membrane of the nose and eustachian tubes. Microscopic research, however, has proved this to be a fact, and the result of this discovery is that a simple remedy has been formulated whereby catarrh, catarrhal deafness and hay fever are permanently cured in from one to three simple applications made at home by the patient once in two weeks.

N. B.—This treatment is not a snuff or an ointment; both have been discarded by reputable physicians as injurious. A pamphlet explaining this new treatment is sent free on receipt of stamp to pay postage, by A. H. Dixon & Son, 387 and 389 West King Street, Toronto, Canada.—*Christian Advocate.*

Sufferers from Catarrhal troubles should carefully read the above.  
50E26t 1mly.

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Price, \$20. We will present one of these Feed Grinders to any one who will send us 75 subscribers, at \$1.00 each.

The Northern Illinois Bee-Keepers' Association, will hold its fall meeting at Harlem, Ill., on Aug. 19, 1890. D. A. FULLER, Sec.

**Advertisements.**

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Mention the American Bee Journal.

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Gallon... holds 10 lbs.	\$1.80	\$12.00
1/2-Gallon, holds 5 lbs.	1.50	9.00
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The second engraving represents THE TAPERING TIN PAILS—made heavier and stronger than those with straight sides. The covers are deeper, and the top-edge of the Pail is doubled over, making it smooth and convenient to handle. Of the Tapering Pails there are five sizes, viz: 1-lb., 4-lb., 7-lb., 13-lb., and 25-lb. Assorted Samples of these will be shipped by express for 75 cents. In quantities, the prices are as follows:

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Tested, each.....	\$1.50
Warranted, each.....	1.00
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Untested, each.....	.75
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Will state that these Queens are all reared from our best honey-gathering strains, in full colonies. We are one of the oldest and largest breeders in America. Give us a trial order.

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